

***The Reliability And Validity Of
Magnetic Resonance Imaging
In Comparison To Arthroscopy
In Knee Injuries***

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I have no financial conflicts to disclose.

Objective

- Magnetic resonance imaging (MRI) which is a non-invasive and radiation-free imaging modality is frequently used by orthopaedic surgeons for diagnosing knee injuries.

Objective

- The aim of this study was to compare knee arthroscopy findings and MRI reports (daily practice reports from different centers) of the patients and to evaluate the reliability and validity of MRI for diagnosing knee injuries.

Materials and Methods

- The retrospective research involved 186 patients (154 male, 32 female) with knee injury who underwent MRI followed by arthroscopic surgery between January 2011 – January 2014.
- The mean age of the patients was 25.7 (range, 16 to 79).

Materials and Methods

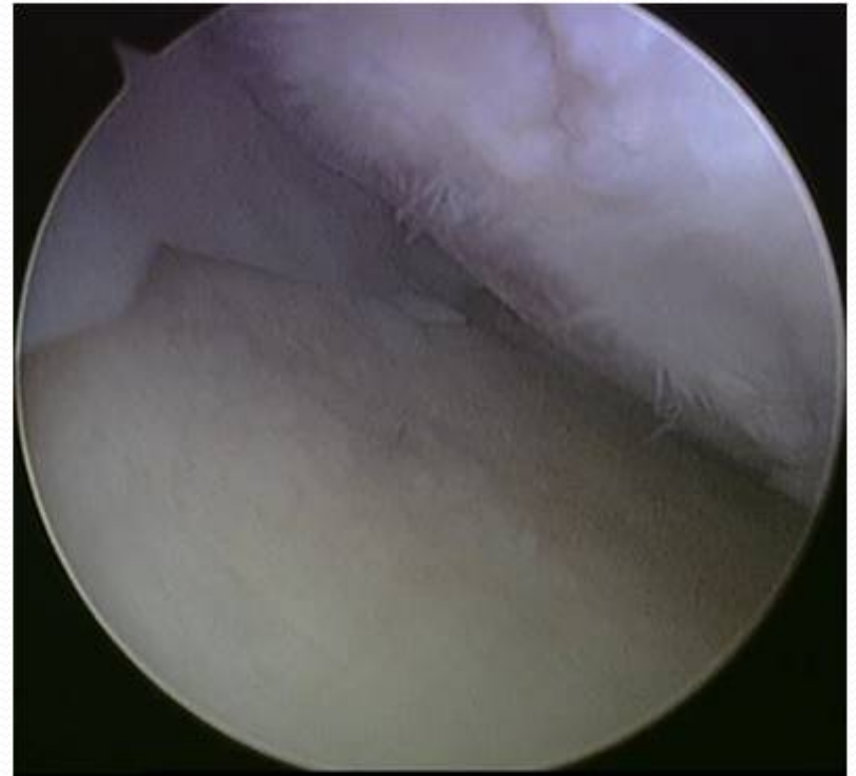
- MRI reports of the patients were daily practice reports from different centers.
- Arthroscopic surgery was performed in same clinic by three experienced orthopaedic surgeons.
- To compare the results of MRI we used arthroscopy which is the gold standard for diagnosis.

Results

- For the identification of anterior cruciate ligament (ACL) injuries the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of MRI were 95.7%, 57.7%, 65.5%, 94.0% respectively.
- For medial meniscal tears they were 88.4%, 53.4%, 63.7%, 83.3%.
- For the evaluation of lateral meniscal tears sensitivity was 46.4%, specificity was 82.1%, PPV was 42.6% and NPV was 84.3%.

Results

- The sensitivity, specificity, PPV and NPV were
 - 32.1%, 92.5%, 53.1%, 83.6% for osteochondral lesions of the patella;
 - 19.0%, 98.3%, 50.0%, 93.0% for osteochondral lesions of the femoral notch;
 - 31.0%, 89.5%, 53.7%, 76.8% for osteochondral lesions of femoral condyles
 - 15.2%, 91.7%, 29.2%, 82.9% for suprapatellar plica respectively.



Conclusion

- The sensitivity and NPV of MRI was low but PPV was relatively high in our research especially for osteochondral lesions, plicas and lateral menisceal tears.
- In the light of this, we can consider using MRI as a negative diagnostic tool for knee injuries

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